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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,241	12/03/2001	Philip Joseph Koh	A8250	6210

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11/26/2002

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EXAMINER

MAGEE, THOMAS J

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 11/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,241

Applicant(s)

KOH, PHILIP JOSEPH

Examiner

Thomas J. Magee

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on August 24, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-33 is/are allowed.
- 6) ☒ Claim(s) 34-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Claims 23 – 43 in Letter No. 5 of August 29, 2002 is acknowledged.

Claim Rejections – 35 U.S.C. 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by McShane (US 5,157,480).

McShane discloses a dielectric package for housing a component with a conductor (64) patterned on the upper portion (die) (65) (See Figure 5) and a conductor (79) patterned on the lower portion (die) (75) with balls (72) for bonding the two aligned die together.

Claim Rejections – 35 U.S.C. 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 35 - 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over McShane, as applied to Claim 34, and further in view of Takahashi (US 5,825,082). McShane discloses (62) (Figure 5) coupling a component to the first portion (die) prior to bonding the two sections together.

McShane does not explicitly disclose the presence of male and female shapes on the two portions of the dielectric package. However, Takahashi discloses in Figures 3 and 4 an interconnectable module, the first and second package having at least one female (9) and one male connection component, respectively. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the male and female connector shapes of Takahashi in order to adequately connect the constituent parts and to combine Takahashi with McShane to obtain a working package.

6. Claims 38 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over McShane, as applied to Claim 34, and further in view of Takamoto et al. (US 5,376,825). McShane does not disclose the formation of an aperture in the housing assembly or the mounting of a component after bonding. Takamoto et al. disclose (Figure 8) the formation of an aperture with cover plate (29) atop and mounting of a component (IC) (200) in the cavity subsequent to bonding. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the aperture of Takamoto et al. in McShane to obtain a useful mounting package.

7. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over McShane in view of Takamoto et al., as applied to Claims 38 – 40 above, and further in view of

Takahashi.

Takahashi discloses the use of modules for high frequency applications, but does not explicitly disclose the use within the millimeter range. It would have been obvious to one of ordinary skill in the art at the time of the invention to extend the use of Takahashi's module to the millimeter range and to combine Takahashi with McShane and Takamoto et al. to obtain a workable package for millimeter microwave integrated circuits.

8. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over McShane as applied to Claim 34 above, and further in view of Takamoto et al.

Takamoto et al. disclose the use of an aperture and versatile mounting of components in the cavity of the package. Takamoto et al. do not disclose the use of optical fibers and semiconductors. However, the mounting of optical fibers and semiconductors in packages is extremely well known in the art. Hence, it would have been obvious to one of ordinary skill in the art to utilize optical semiconductors and fibers in the package of Takamoto et al. to obtain a working package.


Allowance

9. Claims 23 – 33 are allowed. A review of the prior art shows that in the instant application, the method of making an interconnectable package using wafers with a plurality of "carrier" die having a patterned transmission line and etched aperture for mounting of components with etched planar interconnect features, where the die are bonded along planar surfaces to form packets, is not taught or suggested in the art.

Conclusions

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Thomas Magee**, whose telephone number is **(703) 305 5396**. The Examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM (EST). If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, **Tom Thomas**, can be reached on **(703) 308-2772**. The fax number for the organization where this application or proceeding is assigned is **(703) 308-7722**.

Thomas Magee
November 15, 2002


TOM THOMAS
SUPERVISORY PATENT EXAMINER
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